Management Strategies for Patients with Xerostomia (Dry Mouth)

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ABSTRACT

Objective: To discuss management strategies for patients presenting in the clinical setting with xerostomia (dry mouth). Xerostomia is a multifactorial problem and many times is disabling for the individual and challenging to manage. A 66 year old Caucasian female presented to the dental hygiene clinic with a chief complaint of "constant dry mouth". The patient's medical history indicated a previous habit of smoking along with a current history of asthma, chronic obstructive pulmonary disease, and oral candidiasis infection. Contributing factors to the patient's dry mouth include: the use of a CPAP machine at night, oxygen during the day, and two prescription medications whose side effects cause dry mouth (Zoloft and Spiriva). Upon examination this patient was determined to be high caries risk with evidence of a new carious lesion on the mesial aspect of tooth #27. The iteration of meticulous home care is an important role of the clinician in order to alleviate discomfort, taste disturbances, sore mouth, and to prevent future decay and candidiasis infections. Other recommendations that were given in order to combat dry mouth included: use of high fluoride toothpaste (PreviDent 5000), ACT dry mouth rinse, and ACT dry mouth lozenges. It is also important for this patient to drink eight glasses of water a day, avoid sugar containing beverages, and chew sugar-free gum to stimulate salivation. The patients' overall quality of life can be improved if clinicians are able to properly recognize xerostomia and recommend personalized management routines.

INTRODUCTION

Xerostomia is defined as less than 1.5 ml unstimulated salivary flow in 15 minutes. Saliva is vital to the oral cavity to help clear debris and plaque from the teeth and aid as a buffer against acidity in the mouth. Due to a lack of salivary flow, xerostomic patients may have rampant dental caries. Other oral effects include dysgeusia (altered taste perception), dysarthria (speech difficulties), burning mouth, dysphagia (difficulty swallowing), odynophagia (painful swallowing), foul taste, halitosis (bad breath), and fungal infections. Patients with xerostomia will many times present with enlarged salivary glands and intra-oral candidiasis and/or angular chelitis. The oral mucosa appears shiny and dehydrated and the dental mirror may stick to the tissues. Patients with Xerostomia must maintain regular dental therapy appointments in order to maintain optimal dental health. Radiographs must be prescribed periodically in order to detect decay. This condition is seen by dental hygienists on a daily basis. It is our obligation to provide quality care to these patients, prevent future caries, and alleviate discomfort. Patients are living longer and it is likely that the future of dentistry will deal more with patients who have dry mouth and management of this condition will become more complex.

ASSESSMENT

A 66 year old Caucasian female patient presented to the dental hygiene clinic for her 6 months recall appointment for dental hygiene therapy. This patient had previously had scaling and root planing in 2011 and presented for periodontal maintenance and exam. She reported having "constant dry mouth." Clinical decay was found on the mesial #27. Her medical history showed that she had a history of hypertension, asthma. atrial fibrillation, cancer, chemotherapy, COPD, congestive heart failure, rheumatoid arthritis, and depression. This patient uses a CPAP machine at night and oxygen during the day. In order to make the patient comfortable, the clinician modified treatment by only leaning the patient halfway back in the chair to support her respiratory condition.

DENTAL HYGIENE TREATMENT PLAN

The determined treatment plan was Periodontal maintenance (D4910) based on the patients history of scaling and root planning and current periodontitis evidenced by 4-5mm CAL. This patient's plaque score was 32%. The patient reported that her frequency of flossing was "seldom" and she usually brushed 2x/day. Oral hygiene instruction consisted of educating patient on Bass brushing method, brushing of the tongue, c-shaped flossing, and the use of a reach flosser. Patient responded to the recommendations well. Upon DDS examination a new carious lesion was found on the mesial of #27 and restorative work on #7 was indicated for cosmetic reasons. High caries risk was establish for this patient due to her present decay and xerostomic conditions. This patient also stated that she frequently sipped on sweetened beverages in between meals and occasionally snacked on fermentable carbohydrates. In office fluoride varnish 5% was applied and Prevident 5000 toothpaste was prescribed to be used once per day. Other individual recommendations given to this patient were to begin using ACT dry mouth lozenges, and ACT dry mouth rinses.

Table 3. Drugs that may cause dry mouth

Antimuscarinics including treatment for urinary incontinence and increased frequency, e.g. oxybutynin, solifenacin, trospium chloride
Tricyclic antidepressants, e.g. amitriptyline, dosulepin, lofepramine
Proton pump inhibitors, e.g. omeprazole, lansoprazole
Antihistamines
Antiemetics (including both antihistamines and phenothiazines)
Antipsychotics, e.g. quetiapine, risperidone, clozapine
Sympathomimetics, e.g. dopamine, adrenaline
Highly active antiretroviral therapy (HAART) (antivirals used in the treatment of HIV infection)
Drugs used to treat Parkinson's disease, e.g. pramipexole, ropinirole
B2 agonists, e.g. salbutamol, formoterol, ipratropium
Older antihypertensives, e.g. clonidine
Appetite suppressants (legally prescribed amphetamines)
'Cold cures' bought over the counter including ephedrine or pseudoephedrine

1. Montgomery-Cranny J, Hodgson T, Hegarty A. Aetiology and management of xerostomia and salivary gland hypofunction. *British Journal of Hospital Medicine*. 2014;75(9):509-514.

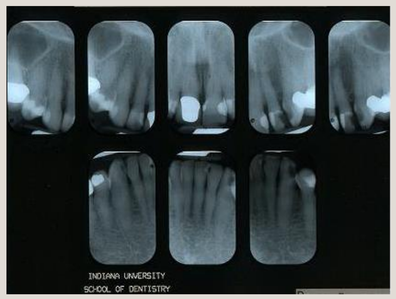

Table 9. Structured management of xerostomia and salivary gland hypofunction

General advice	Smoking cessation
	Limit caffeinated drink intake
	Maintain hydration levels with adequate oral fluids daily
	Minimize sugary food and drink intake; chew sugar-free gum or 'sweets' to stimulate salivation
	Advise the patient to register with a general dental practitioner for preventative and restorative treatment
Medication review	Check the patient's drugs for xerostomia-inducing agents – avoid or replace if possible
	Prescribe saliva substitutes, e.g. BioXtra toothpaste, mouthwash and gel
	Ensure dentate patients are not prescribed acidic saliva substitutes
Referral to oral medicine	For complex, multifactorial cases
	When suspecting Sjögren's syndrome or other underlying systemic disease
	Those not improving with above measures
Prescription of pilocarpine	Reserved for cases of primary Sjögren's syndrome or post-radiotherapy to the salivary gland region
	Initiated by oral medicine, continued in primary care
	Titrate dose slowly, monitor for side effects (e.g. sweating, light-headedness)

1. Montgomery-Cranny J, Hodgson T, Hegarty A. Aetiology and management of xerostomia and salivary gland hypofunction. *British Journal of Hospital Medicine*. 2014;75(9):509-514.

EVALUATING XEROSTOMIC PATIENTS

TEETH
- Increased decay
- Demineralization
- Erosion and attrition
- Increased sensitivity
- Increase plaque accumulation

MUCOSA
- Mucositis
- Atrophic mucosa
- Stomatitis and lichenoid lesions
- Recurrent oral candidiasis
- Ulcerations
- Painful/Burning mouth

TOUNGE
- Dryness, Fissuring
- Lobulation
- Atrophy
- Erythema
- Loss of papilla
- Scalloped borders

LIPS
- Dryness
- Chapping
- Peeling
- Fissuring
- Angular chelitits

SALIVARY GLANDS
- Poor salivary output
- Frothy saliva
- Reduced salivary pooling
- Swelling of glands
- Enlargement of glands
- Recurrent Sialadenitis

OTHER
- Halitosis
- Difficulty talking, chewing, or swallowing
- Altered taste
- Food retention
- Nutritional deficiencies
- Dry eyes associated with dry mouth

2. Plemons J, Al-Hashimi I, Marek C. Managing xerostomia and salivary gland hypofunction. The Journal of the American Dental Association. 2014; 145 (8):867-873.

CONCULSION AND MANAGEMENT

Treatment planning for the xerostomic patient should be tailored to the individual's needs. Patient education is of the utmost importance for these patients. Information should be given regarding the potential sequelae of xerostomia including; caries, mucosal complication, and oral candidiasis. Emphasis should be put on daily oral hygiene regimen including brushing twice-daily, regular use of floss or other interdental cleaner, and use of an alcohol-free mouthrinse. Consultation with the patients physician may be considered if the dry mouth symptoms are likely caused from a systemic disease or due to medical treatment (i.e.: radiation therapy or prescription drugs-see table 3). Preventive measures are necessary for optimal care of patients with dry mouth. Preventive measures include: use of a high fluoride toothpaste, use of a "dry mouth" rinse, and "dry mouth" lozenges or sugar-free candies. It is also important for these patients to avoid sugar containing beverages, chew sugar-free gum to stimulate salivation, and maintain adequate hydration by drinking eight glasses of water per day. Temporary relief from xerostomia can be accomplished by sipping water, sucking on ice, and using a humidifier during sleep. Tobacco use is associated with dry mouth and the use of these products should be minimized or eliminated all together. The clinician should be able to assess tobacco use, document oral mucosal changes, and integrate tobacco cessation counseling. Frequent dental visits every three to six months is recommended for these patients due to their high risk of developing caries and secondary infections (i.e.: candidiasis). If the patient's unstimulated salivary flow is less than 1.5 ml in 15 minutes, pharmacotherapy with salivary stimulants such as Pilocarpine or Cevimeline may be prescribed. Pilocarpine should be used four times per day at 5 milligrams and Cevimeline is 30 mg three times per day. If the patient adheres to all of the clinicians recommendations the individuals will experience a more satisfying oral environment.

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1. Montgomery-Cranny J, Hodgson T, Hegarty A. Aetiology and management of xerostomia and salivary gland hypofunction. *British Journal of Hospital Medicine*. 2014;75(9):509-514.

2. Plemons J, Al-Hashimi I, Marek C. Managing xerostomia and salivary gland hypofunction. *The Journal of the American Dental Association*. 2014; 145 (8):867-873.

3. Sreebny L, Vissink A. *Dry Mouth, the Malevolent Symptom: A Clinical Guide*. Ames, Iowa: Wiley-Blackwell; 2010.